

### **WHAT IS CLAIMED IS:**

1. A timer device for gas range for allowing gas turning-off automatically, which comprising a housing, a disc-like wheel, a motor, a driving wheel, an microswitch and a timing circuit, wherein the housing  
5 is mounted on a surface of a gas stove, an top surface and a bottom of the housing respectively defined with an upper and a lower round holes for the passage of a rotary-knob switch, about the periphery of the upper round hole formed with a plurality of locating holes for the insertion of locating wheels, the locating wheels being "V"-shaped in its cross section  
10 for supporting the disc-like wheel, the disc-like wheel mounted under the upper round hole, at the center of the disc-like wheel thereof an oblong aperture formed and at the periphery of the bottom of the disc-like wheel provided with teeth for engaging with the driving wheel of the motor, a protrusion upstanding from the disc-like wheel; the motor disposed in the  
15 housing, which can be actuated by signals emitted from the timing circuit, the microswitch is a three pole switch having a leaf spring employed to be contacted by the upstanding protrusion of the disc-like wheel, with the cooperation of the prior mentioned elements, when the gas is being used, the protrusion disengages from the leaf spring of the microswitch, and the  
20 normal close pole is switched on to turn on the timing circuit and make it start to count time, when the set time is reached and if the gas is not turned off, the motor will be actuated to drive the disc-like wheel to return to its original position so as to make the rotary-knob switch turn

the gas off, at the same time, the protrusion will touch the leaf spring of the inching switch to cut off the power; when the gas is turned off, the protrusion keeps touching the leaf spring of the microswitch, the normal close pole is disconnected from power.

5           2. The timer device for gas stove for allowing gas turning-off automatically, wherein the top surface and bottom of the housing is defined with a round hole for respectively insertion of a conventional rotary-knob switch, the rotary-knob switch moves along with the movement of the disc-like wheel so as to achieve an automatic timing  
10 effect.

          3. The timer device for gas stove for allowing gas turning-off automatically, wherein at the center of the disc-like wheel is defined with an oblong aperture for insertion the rotary-knob switch, on the periphery of the bottom of the disc-like wheel is provided with plural teeth for  
15 engaging with the driving wheel of the motor, and at the outer periphery of the disc-like wheel is circularly defined with a V-shaped groove for driving the rotary-knob switch.

          4. The timer device for gas stove for allowing gas turning-off automatically, wherein the timing circuit generally includes a quartz  
20 oscillating circuit, a counting circuit and a time-setting knob, the counting circuit has multi-staged divider, which enables signals to be transmitted with ten minutes as a time unit, the timing-setting knob can set the time with ten stages for choices.

5. The timer device for gas stove for allowing gas turning-off automatically, wherein the timing circuit can be additionally provided with a battery-detecting circuit which having a Zener diode for detecting whether the voltage of the battery is enough, the Zener diode is turned off in case of shortage of the battery power, an electrical crystal (Tr4) will be turned off, and a base electrode (Tr3) receives the signals emitting from a timer (IC7), the timer (IC7) which counting time with second as a time unit will emit signals repeatedly, since the timer (IC7) emits signals once per second, a warning light (LED) flashes periodically so as to inform the user to replace the battery unit.